

SINGLE PHASE TRANSFORMER WITH ON-LOAD VOLTAGE REGULATOR

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Abstract

PURPOSE: To improve the efficiency of a transformer while simplifying the structure by reducing the number of parts by not winding exciting coils on side leg core forming an ON-load voltage regulator, but instead, providing reverse winding for 1/2 of current shunting coils for each parallel circuit.

CONSTITUTION: A primary coil 6 and secondary coils 9, 10 of parallel connection are wound on a main leg core 3 of a single phase transformer with an ON-load voltage regulator, exciting coils are not provided on side leg cores 4, but current shunting coils 15-18 are insteads provided, and an exciting coil 8 and tapped coils 13, 14 are wound on a core 5 for the regulator. In this structure, the coils 15-18 provided at the core 4 are formed of coils 15, 16 and 17, 18 wound as sets on the core 4 in opposite winding for each 1/2, thereby cancelling the ampere-turn each other, thereby producing only the leakage impedance between the coils. Coils 9, 18, 17, 14 are connected in series with each other, and coils 10, 16, 15, 13 are connected in series, and are formed in two parallel circuits.

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